



INSTITUTE FOR DEFENSE ANALYSES

**Department of Defense Corrosion  
Prevention and Mitigation**

J.R. Transue, Project Leader

January 2003

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## **Department of Defense Corrosion Prevention and Mitigation**

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## PREFACE

This task was conducted by the Institute for Defense Analyses (IDA) in response to a request<sup>1</sup> from the Director, Acquisition Resources and Analysis in the office of the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD(AT&L)). The IDA study team consisted of Dr. John R. Transue, Project Leader; Dr. Joseph T. Buontempo; BG William Fedorochko, USA (Ret.); VADM John “Bat” LaPlante, USN (Ret.), and Dr. Benjamin A. Wilcox.

The authors wish to express their appreciation to the staff of the USD(AT&L), especially the Honorable Michael Wynne (Principal Deputy to the USD(AT&L)), and key staff members—Mr. Alan W. Beckett, Mr. Daniel Dunmire, Mr. Robert T. Mason, Dr. Spiros G. Pallas, and Dr. Lewis E. Slotter.

The authors also wish to express their appreciation for the constructive criticism provided by Dr. David L. Randall, Director-System Evaluation Division, and Mr. Philip L. Major, Vice President-Planning and Evaluation.

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<sup>1</sup> *DoD Corrosion Prevention and Mitigation*, Contract DASW01-98-C-0067/DASW01-02-C-0012, Task AO-1-2243, December 4, 2002.

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A. Glossary

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**DoD Corrosion Prevention and Mitigation**  
Report to PD, USD(AT&L)

17 January 2003

This is the final briefing of the “DoD Corrosion Prevention and Maintenance” task (Task Order AO-1-2243) performed by the Institute for Defense Analyses (IDA). The briefing was presented to the Principal Deputy Under Secretary of Defense for Acquisition, Technology, and Logistics (PD USD(AT&L)), the Honorable Michael Wynne, on January 17, 2003.

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## IDA Project Team

- ❑ Dr. John Transue (Team Leader)
- ❑ Dr. Joe Buontempo
- ❑ BG Bill Fedorochko, USA (Ret)
- ❑ VADM Bat LaPlante, USN (Ret)
- ❑ Dr. Ben Wilcox

The team performing the task has extensive experience in technical management, the Defense acquisition system, the Department of Defense (DoD) resource allocation process, physical chemistry, materials and processes, and Service logistics and maintenance practices.

## Outline

- ❑ Background
- ❑ Appraisal of the Situation
  - Management Structure and Schema
  - Illustrative Accomplishments
  - Summary Appraisal
- ❑ Options To Meet Legislative Requirements
  - Strategy
  - Organizational Structure
- ❑ Summary, Highlights, and Next Steps

This briefing summarizes the legislative background and a previous briefing, describes the current situation as the study team found it, and develops and assesses options for meeting the legislative requirements.

## Corrosion Prevention and Mitigation Legislation

- ❑ Legislation requires SECDEF to
  - Designate an individual or organization to
    - Develop policy
    - Review budgets
    - Oversee (equipment and infrastructure)
    - Monitor acquisition practices
  - Implement a long-term strategy to
    - Expand emphasis
    - Apply requirements for testing new technologies
    - Implement information system for proven methods and products
    - Establish R&D program, including plan for transitioning
  - Include in the strategy
    - Policy guidance
    - Performance measures and milestones
    - Personnel and funding needed to execute

Section 1067 of the Defense Authorization Act (DAA) for Fiscal Year (FY) 2003 is titled “Prevention and Mitigation of Corrosion of Military Equipment and Infrastructure.” This legislation requires the Secretary of Defense (SECDEF) to designate a person or organization to be responsible to him, after the USD(AT&L), for oversight and coordination of “...efforts throughout the Department of Defense to prevent and mitigate corrosion of the military equipment and infrastructure of the Department.” This chart lists the duties prescribed by the legislation.

The SECDEF is also required to develop and implement a long-term strategy to reduce corrosion and the effects of corrosion.

## Legislation (Cont'd)

- ❑ Legislation sets schedule
  - Designate an official or organization 90 Days, ~ 3 Mar 03
  - Interim report With 04 PB
    - Description of organization
    - Outline of long-term strategy
  - Long-term strategy report 1 Year, ~ Dec 03
- ❑ Legislation also tasks GAO to
  - Monitor implementation of long-term strategy
  - Submit report assessing extent of implementation of long-term strategy 18 months, ~ June 04

When the President submits the budget request for FY 2004, the SECDEF is required to provide an “interim report.” This report has to describe the organizational structure for carrying out the responsibilities under this legislation and present an outline of the long-term strategy.

Within 90 days of the DAA’s enactment, the SECDEF must designate an official or an organization charged with carrying out the responsibilities under this legislation. Within 1 year of enactment, the SECDEF must submit to Congress another report “...setting forth the long-term strategy.”

The General Accounting Office (GAO) is responsible for monitoring the implementation of the long-term strategy and has to report to Congress within 18 months of the DAA’s enactment.

### Initial Meeting (13 December 2002)

- ❑ Reviewed legislative requirements
- ❑ Highlighted IDA approach and research to date
- ❑ Discussed corrosion management responsibilities
  - Current AT&L organization
  - Potential future constructs
- ❑ Identified additional information needs
  - How is system working today?
  - What policies are in place?
  - Are we doing the right types of things (provide examples)?
  - Is what we are doing adequate?

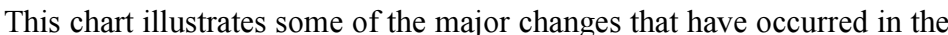
The study team met with the Principal Deputy (PD) about 3 weeks after the task began. At this meeting, the approach and status were presented, and the responsibilities of the major offices within the office of the USD(AT&L) were discussed.

Several preliminary options for the responsible official or organization were presented and discussed. The PD posed the questions shown in this chart.

## Outline

- ❑ Background
- ❑ Appraisal of the Situation
  - Management Structure and Schema
  - Illustrative Accomplishments
  - Potential Challenges
- ❑ Options To Meet Legislative Requirements
  - Strategy
  - Organizational Structure
- ❑ Summary, Highlights, and Next Steps

In this next section, we highlight the results of our work in response to the questions posed by the PD during our initial meeting.



- Decision-making was centralized in the USD(AT&L). The Office of the

- The contemporary management schema is markedly different. Today,

- Decision-making is much more decentralized, and the OSD staff requires



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In summary, the systems acquisition staff at USD(AT&L) becomes involved in matters such as corrosion only when there is a definite need for their involvement.

There does not appear to have been a marked shift to decentralize materiel maintenance and infrastructure or the overall resource allocation procedure.

## DoD Guidance and Policy Highlights

### □ Technology Base Focus

#### – DTAP (Strategic Goals – Preservation of Aging Assets)

**Materials and Processes for Metal Cleaning, Corrosion Control, and Coating.** *Develop new, better, and environmentally acceptable corrosion control and paint technologies to reduce the \$5.5+ billion annual Navy and Air Force cost associated with the current approaches*

#### – General Thrust [adapted from Dr. Sega's 10 April 2002 response to SASC]

*Efforts are focusing on investigating advanced means to detect, evaluate, and control hidden and visible corrosion in platform structures and subsystems. Emphasis is being placed on*

- *Sustaining current aircraft, ships, and ground vehicles*
- *Developing more corrosion-resistant advanced materials and processes*
- *Developing environmentally benign technologies*

This chart and the following two charts highlight corrosion-related guidance and policy in the areas of technology development, systems acquisition, systems maintenance, and infrastructure.

The Defense Technology Area Plan (DTAP) provides official guidance regarding DoD's efforts in corrosion technology development. The excerpt shown here is taken from "Preservation of Aging Assets" in subsection A.2 (Strategic Goals) of *Chapter V (Materials/Processes)*. Dr. Ronald Sega, Director of Defense Research and Engineering (DDR&E), elaborated on this subject in his response to a Question for the Record (QFR) in connection with his testimony on "Technology for Combating Terrorism and Weapons of Mass Destruction in Review of the Defense Authorization for FY03" for the Senate Armed Services Committee (SASC) Subcommittee on Emerging Threats and Capabilities (April 10, 2002).

## DoD Guidance and Policy Highlights

### ❑ **Systems Acquisition (DoD Regulation 5000.2-R)**

*The PM shall consider and implement corrosion prevention and control activities to minimize the impact of corrosion/material deterioration throughout the system life cycle. Corrosion prevention and control methods include, but are not limited to, the use of effective design practices, material selection, protective finishes, production processes, packaging, storage environments, protection during shipment, and maintenance procedures. PMs shall establish and maintain a corrosion prevention and control reporting system for data collection and feedback, and use it to adequately address corrosion prevention and control logistic considerations and readiness issues.*

### ❑ **Maintenance (DoDD 4151.18)**

*DoD components shall provide an adequate program for maintenance of assigned material at all levels to meet prescribed readiness and combat system objective and provide for applicable mobilization and sustainment requirements. Maintenance of equipment and material shall be performed at the lowest level to ensure optimum readiness and economic use of resources.*

Department of Defense Directive (DoDD) 5000.1 (The Defense Acquisition System), Department of Defense Instruction (DoDI) 5000.2 (Operation of the Defense Acquisition System), and DoD 5000.2-R [Mandatory Procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs] were cancelled on October 30, 2002. In their place, interim guidance (effective for 120 days) was issued. Permanent guidance is to be issued at the end of the 120-day period. The excerpt taken from the most recent version of 5000.2-R highlights the fact that corrosion prevention and control activities in acquisition reside with the PM. Specifically, corrosion must be considered along with other life-cycle cost and effectiveness issues.

Corrosion maintenance falls under the general maintenance policy stated in DoDD 4151.18 (Maintenance of Military Materiel). In general, each Service handles maintenance to meet prescribed readiness and combat system objectives and to provide for applicable mobilization and sustainment requirements.

## DoD Guidance and Policy Highlights (Cont'd)

### ▣ Infrastructure

#### – Defense Facilities Strategic Plan

*We must preserve the quality of our facilities through proper sustainment, restoration, and modernization programs....We must guarantee that installations and facilities have the qualities and characteristics and are in the condition needed to perform their functions.*

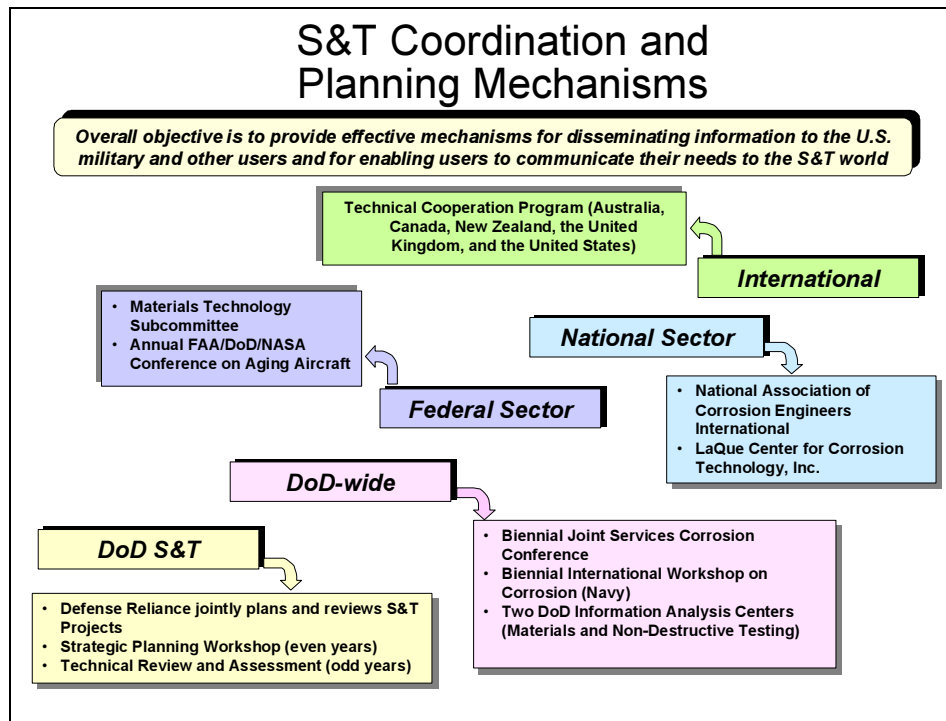
#### – Recent Initiatives

- *Installations Policy Board*
- *Facilities Assessment Database*
- *Modern Real Property Management Information System*
- *Facilities Sustainment and Aging Facilities Models*
- *Facilities Recapitalization Metric*

*Corrosion prevention and mitigation are addressed  
in a wide range of DoD activities*

This final chart highlighting guidance and policy addresses the area of infrastructure, which includes installations, bridges, and buildings. The excerpt from the Defense Facilities Strategic Plan states the general policy concerning the condition of facilities. The effort to preserve the quality of facilities through proper sustainment, restoration, and modernization programs includes corrosion control and prevention. Recent initiatives aimed at improving the Department's efforts in this area include establishing an Installations Policy Board and developing a Facilities Assessment Database, a Modern Real Property Management Information System, Facilities Sustainment and Aging Facilities models, and a Facilities Recapitalization Metric.

This and the previous two charts show that guidance and policy regarding corrosion prevention and mitigation for both materiel systems and infrastructure are in place today.



Numerous coordination and planning mechanisms are used for disseminating information to the U.S. military and other users and for enabling users to communicate their needs to the science and technology (S&T) world. This chart highlights the major efforts taking place in sectors ranging from DoD S&T (bottom left) to international (top right). The material was adapted from “Coordination and Connectivity of Corrosion-Related Science and Technology” by L. E. Slotter, Office of the Deputy Under Secretary of Defense for Science and Technology (ODUSD(S&T))/Weapons Systems (July 15, 2002). Limited time and resources did not allow the study team to assess the effectiveness of these coordination mechanisms.

Next, we will show some selected examples of how the Navy and the Marine Corps are addressing corrosion matters. The study team did not attempt a search for similar examples from the Army and Air Force.

## Navy Acquisition Highlights

- ❑ **V-22:** Performance specs have forced the following innovative corrosion control measures:
  - Pressurized transmissions
  - Component encapsulization
  - Composite materials
  - Elimination of voids/traps
- ❑ **DDG-51:** Corrosion control IPT initiatives that have been implemented include the following:
  - “Twisted” rudders to reduce abrasion of coatings
  - Epoxy coatings
  - Stainless steel doors and fittings
  - Drainage and intake systems

Performance specifications, such as maintenance man-hours per flight hour and the elimination of intermediate maintenance, have forced significant improvement in corrosion prevention measures (corrosion abatement is a leading consumer of maintenance man-hours). Transmissions are pressurized to prevent the introduction of moist air into the transmission as it cools and as the air inside decreases in volume. In other aircraft series, areas in which moisture collects (voids, pockets, traps) have generated high maintenance expenses. These have been largely eliminated in the V-22.

The DDG-51 program has established a dedicated Integrated Process Team (IPT) for corrosion control. Solutions have ranged from the predictable (improved coatings and stainless steel fittings) to the innovative (rudders curved and contoured to reduce the effects of cavitation on rudder surfaces and coatings). Voids, pockets, and traps have been greatly reduced in uptake systems, and those that cannot be removed have been fitted with drains.

## Navy Maintenance Highlights

- ❑ **LCAC:** Operates in an intense saltwater environment but has had very high availability rate over time, primarily because of effective corrosion control program and measures
  - Manual with standards exists and is used
  - Frequent inspections are conducted
  - Maintenance is metric based
  - Government/industry workshops are conducted
  - Corrosion control database has been established
- ❑ **NAVSEA**
  - ERM program includes metrics, analysis, information-sharing, and a single mission corrosion control entity (National STC)
  - Program has resulted in significant reductions in corrosion-related man-hours and cost avoidance

The Landing Craft Air Cushion (LCAC) maintenance program demonstrates that corrosion control is possible even in the most challenging environments. The LCAC operates at high temperatures in a virtual cloud of saltwater mist. Nevertheless, in the past 3 years, only 1 craft out of 91 has been out of commission because of corrosion. There are no high technology or high cost solutions employed—just a robust program of inspection, standards, data collection, and information sharing.

In a more general sense, the Naval Sea Systems Command (NAVSEA), which is charged with overseeing surface ship maintenance, has included corrosion prevention in a larger program of maintenance practice improvements. Significant resources are dedicated to investigating and evaluating new technologies, particularly through the National Surface Treatment Center (STC). Over the past 3 years, the Navy has documented significant maintenance cost avoidance through practices as diverse as dedicated contract preservation teams, cathodic protection, and replacement of vulnerable components with corrosion-resistant materials.

## Navy Facilities Highlights

- ❑ NAVFAC's specialty unit, the NFESC, is the single POC for corrosion prevention/control in facility acquisition and maintenance
- ❑ Services include
  - Design review
  - Training and technical assistance
  - Policy development
  - Cathodic protection (with database)
  - Base surveys
  - Research and analysis
- ❑ Each NAVFAC engineering field division is staffed with full-time corrosion control people

The Navy Facilities Engineering Command (NAVFAC) has established a single point of contact (POC) for all installations and facilities. This center, the Naval Facilities Engineering Service Center (NFESC) in Port Hueneme, California, accomplishes all design reviews, does base surveys, maintains a database, provides training and technical assistance, and performs several other corrosion-related functions for the Navy and the Marine Corps.

Each of the four NAVFAC engineering field divisions [Atlantic Division (LANTDIV), the Southern Division (SOUTHDIR), the Southwest Division (SWDIV), and the Pacific Division (PACDIV)] has a Corrosion Office. The result is a common outlook and focus across the facilities infrastructure acquisition and management community.



## Summary Appraisal

- ❑ Management information and decision-making on corrosion and corrosion-related matters is decentralized to the Military Departments
  - Efforts are tailored to meet the specific needs of each Department
  - Various functional offices within each Department are involved
  - A variety of coordination mechanisms are used to integrate efforts and share information within DoD and with commercial suppliers
- ❑ Corrosion prevention and mitigation activities should be an element in tradeoff decisions involving cost, useful service life, and effectiveness
- ❑ Time and information constraints precluded us from assessing the adequacy of today's management system and resources, but our limited exploratory research suggests that
  - Policies and guidance exist
  - Management is involved
  - Considerable resources are being applied to the challenge

The first statement here applies strictly to system acquisition. Over the last 12 years, acquisition decision-making has been decentralized. This has been a deliberate move to make the acquisition system work more efficiently and effectively. There have not been similar large changes in the degree of decentralization in the other areas during this period, and the primary responsibility for corrosion prevention and mitigation activities continues to rest with the Services. Coordination activities are well established.

To ensure a successful corrosion prevention and mitigation program, activities for corrosion prevention and mitigation activities should be elements in broader tradeoff decisions—not chosen arbitrarily or in isolation.

After this short (roughly 2-month) effort, we cannot assess whether the current management system and resources are adequate, but we have discovered that policy or guidance exists, that management is involved, and that considerable resources are applied to corrosion prevention and mitigation.

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## Outline

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The next section outlines an approach for developing the long-term strategy, discusses the management decisions that can lead to designation of an official and organization structure, and recommends a specific official and organization.

## The Long-Term Strategy Basic Content per Legislation

- ❑ Develop a long-term strategy to
  - Expand emphasis
  - Apply requirements for testing new technologies
  - Implement an information system for proven methods and products
  - Establish an R&D program, including plan for transitioning
- ❑ The issues to be included in the long-term strategy are
  - Policy guidance
  - Performance measures and milestones
  - Personnel and funding needed to execute

*With 2004 President's Budget, DoD is only required to submit an outline of the long-term strategy and a description of the DoD organization for managing corrosion*



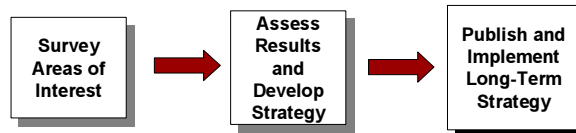
*Development of an appropriate long-term strategy requires extensive investigation into what is now being done regarding corrosion*

The legislation is quite specific with regard to the long-term strategy. It provides a purpose (expand emphasis), lists several objectives (requirements for testing, information system, R&D program with transition plan), and specifies some of the content.

Corrosion prevention and mitigation already are consuming considerable resources and involve well-established information exchange and coordination mechanisms. Before developing a comprehensive strategy, we believe that an extensive investigation should be conducted into what is being done now and what opportunities exist for developing a better corrosion prevention and mitigation program in the future.

### Proposed Approach to Filling Information Voids and Developing a Long-Term Strategy

- ❑ A broad spectrum of options is available with regard to the content and thrust of the long-term strategy
- ❑ The proposed approach (highlighted below) is designed to keep AT&L's options open regarding the specifics of the long-term strategy until additional information and insights are gained in the following areas:
  - S&T
  - Systems acquisition
  - Logistics support (e.g., equipment maintenance, pre-positioning, and so forth)
  - Infrastructure maintenance and construction



As shown in this chart, we suggest that AT&L first survey the current situation in more detail to determine exactly what is being done today. The term “survey” denotes the need for an extensive information-gathering effort.

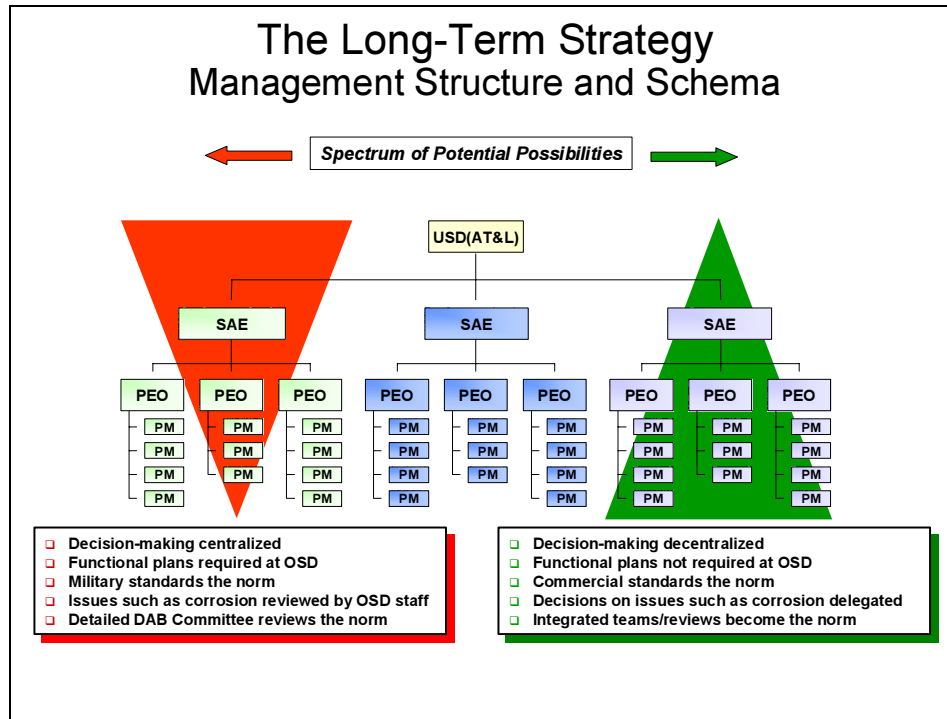
The results of this effort would form the basis for developing a long-term strategy for the Department and implementing specific tasks in support of the objectives contained in the strategy.

The next chart highlights the potential focus of such a survey or information-gathering effort.

## Survey and Information-Gathering Effort

- ❑ Survey and information-gathering effort is focused on
  - Identifying existing management policies and procedures to include processes for reviewing and funding corrosion-related efforts
  - Cataloging ongoing efforts and their status (DoD and commercial organizations/trade associations)
  - Highlighting mechanisms for exchanging information within DoD and the Federal Government and with the commercial base
  - Identifying major successes and challenges (actual or potential)
- ❑ The intent is to gather the information needed to make more informed choices on what to do regarding DoD
  - Policies and procedures
  - Funding of corrosion and corrosion-related matters
  - Interface with commercial base/suppliers
  - Management structure and schema

Management organizations, information systems, budgets, procedures, and coordination activities related to corrosion already exist. These mechanisms should be understood before they are changed.



The degree of centralization of decision-making varies among system acquisition, S&T, materiel maintenance, infrastructure construction and maintenance, and the budgeting or resource allocation process. The management process adopted for corrosion matters probably should reflect these differences. Minimizing the disruption of the current management structure and schema would argue against installing a corrosion “czar” for an area that is necessarily organized and managed through diverse mechanisms.

### The Legislation and Major Decisions Inherent in Implementing It

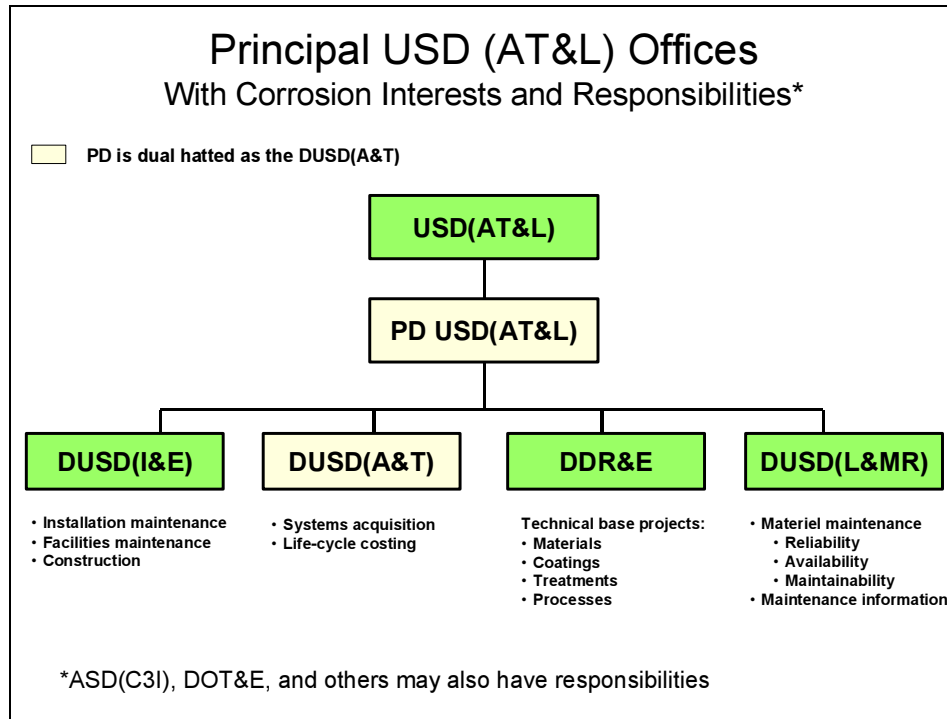
- ❑ Legislation requires SECDEF to designate an individual or organization to
  - Develop policy
  - Review budgets
  - Oversee (equipment and infrastructure)
  - Monitor acquisition practices
- ❑ Three decisions are inherent in implementing the legislation and direction provided
  - The position or organization that should be assigned the legal responsibility involved
  - The size of the supporting office that should be established to support the designated position or organization
  - To whom the supporting office should report and with whom it should communicate

This chart reiterates what the legislation requires from an organizational perspective and highlights the three major organizational decisions that are inherent in implementing the legislation. These decisions involve

- Designating a position or organization that will be assigned the legal responsibility for managing corrosion and corrosion-related matters
- Determining the size of the supporting office that should be established to support the designated position or organization and accomplish the work envisioned
- Establishing appropriate reporting and communication channels for the supporting office.

Before addressing the options, we will review the major responsibilities of the current AT&L organization with regard to corrosion-related matters.





Several different Deputy Under Secretary of Defense (DUSD)-level offices within AT&L deal with corrosion-related matters. These offices essentially have management oversight over selected areas such as installations and construction, systems acquisition, the technology base, and materiel maintenance.

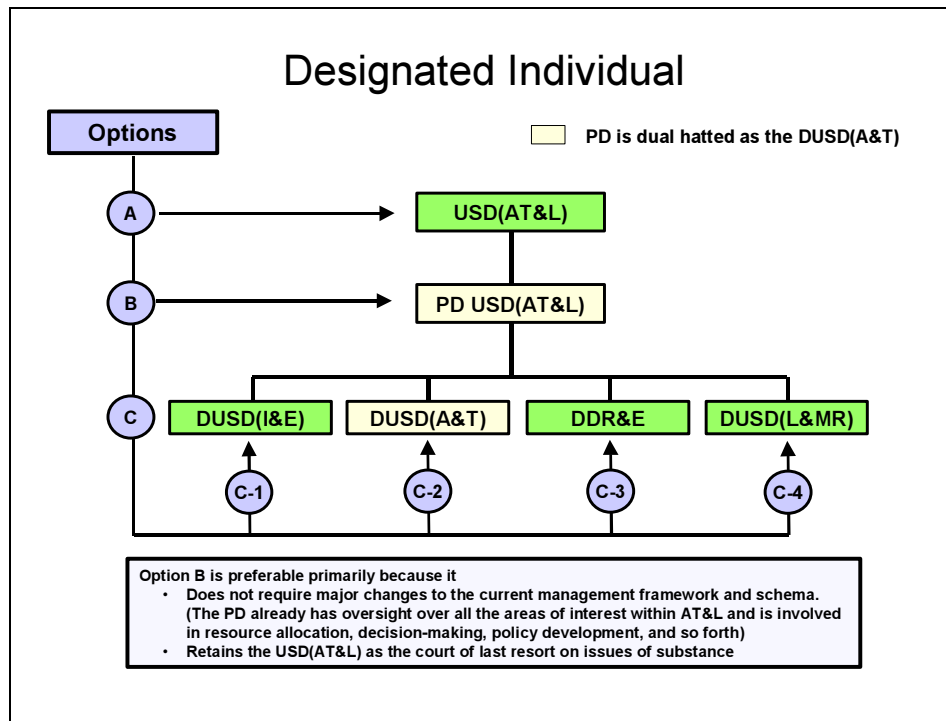
The PD, who is dual hatted as the DUSD(A&T), has management oversight over all these areas and is responsible for providing integrated advice on these areas to the Under Secretary.

**Suggested Guidelines Regarding  
Organizational and Process Matters  
for the Initial Year**

- ❑ To promote accountability and establish a central focal point, the responsible entity should be an individual
- ❑ Initially, the supporting office should be large enough only to do the first year's work
- ❑ Reporting and coordination lines should be kept as simple as possible and should strive to exploit the current management structure and schema in AT&L and the Department

This chart highlights the guidelines we developed to assist us in developing organizational and process-related options for the initial year. These guidelines are designed to

- Promote individual accountability and implementation responsibility
- Provide an appropriately sized supporting office to accomplish the first year's work
- Establish short, clear lines of responsibility and authority within AT&L and the remainder of the Department.



Concerning the position or organization that should be assigned the legal responsibility, we believe that the Under Secretary should not personally assume these additional responsibilities because of their detailed nature.

The same argument could apply to the PD, but we note that the PD is the lowest level in the USD(AT&L) organization that has authority over all the offices that have major responsibilities for corrosion.

At the Deputy Under Secretary level, the official would necessarily be making decisions and coordinating programs with peers and representatives of peers. Differences of opinion would have to be referred to the PD for resolution. Also, Service specialists in the various areas of corrosion preservation and mitigation (acquisition, maintenance, infrastructure, and so forth) would not relate easily to a leadership responsible for only one, different aspect.

We believe the best option is to have the PD be the responsible individual.

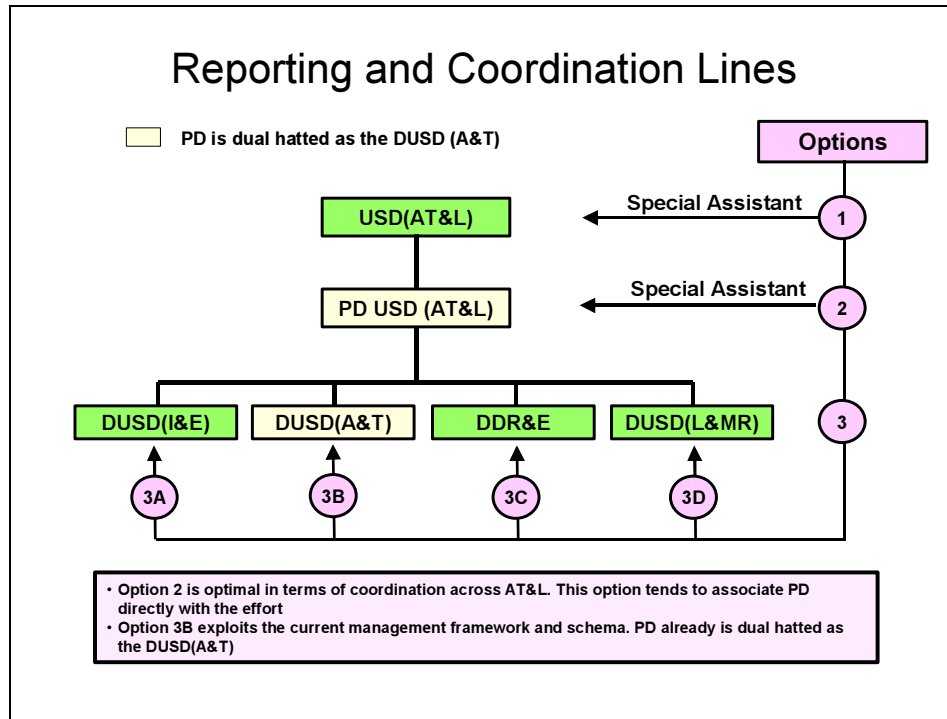
### Proposed New Supporting Office

- ❑ Establish a small supporting Corrosion Secretariat consisting of
  - A full-time senior executive (possibly limited term) and a staff assistant
  - A member of the AT&L staff who can serve as a backup to the executive as an additional duty
- ❑ The new Secretariat would be supported by representatives from the following organizations, who would meet as required to conduct the business at hand:
  - Military Services
  - JLCs
  - OSD functional offices/areas (as appropriate)
  - DLA
- ❑ The new Secretariat would function as a universal POC for corrosion and corrosion-related matters as well as an adjunct to the Executive Secretariat of the JLC

The office supporting the PD does not have to be large. We believe that a senior executive [a member of the Senior Executive Service (SES), possibly a limited term SES] and a staff assistant would suffice as the full-time members. Another member of the USD(AT&L) staff could serve as backup to the senior executive.

The other stakeholders in the corrosion program would be asked to appoint representatives who would participate as required in the work of the Corrosion Secretariat. This would involve developing policy, coordinating programs, adopting standards, supporting databases, and so forth. All the stakeholders would have a voice in these matters.

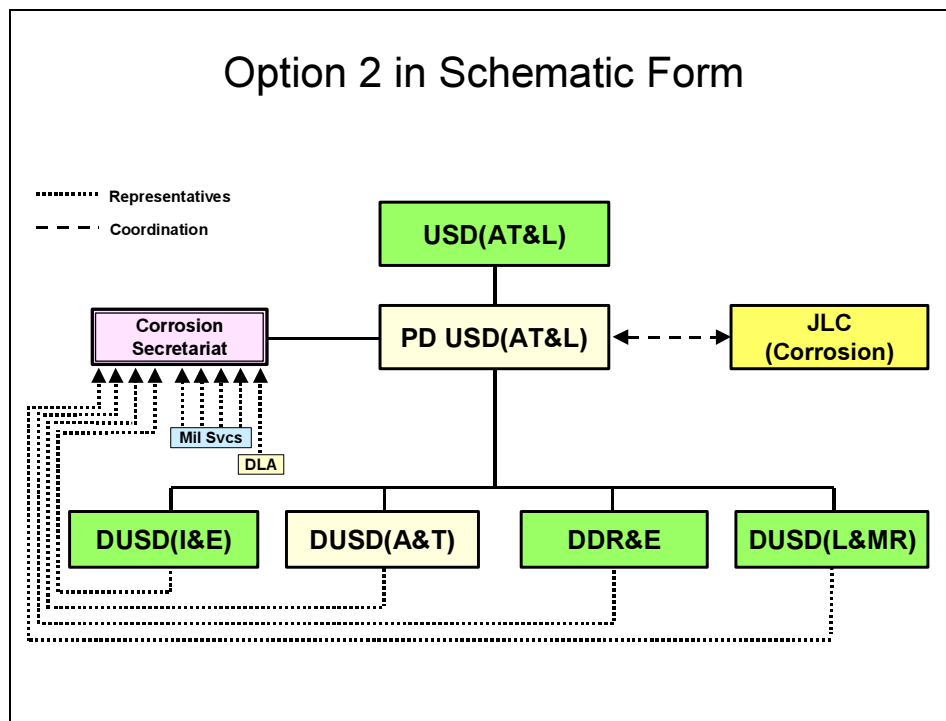
The Secretariat would be the working-level POC for Congressional staff and for elements of the Services and industry.



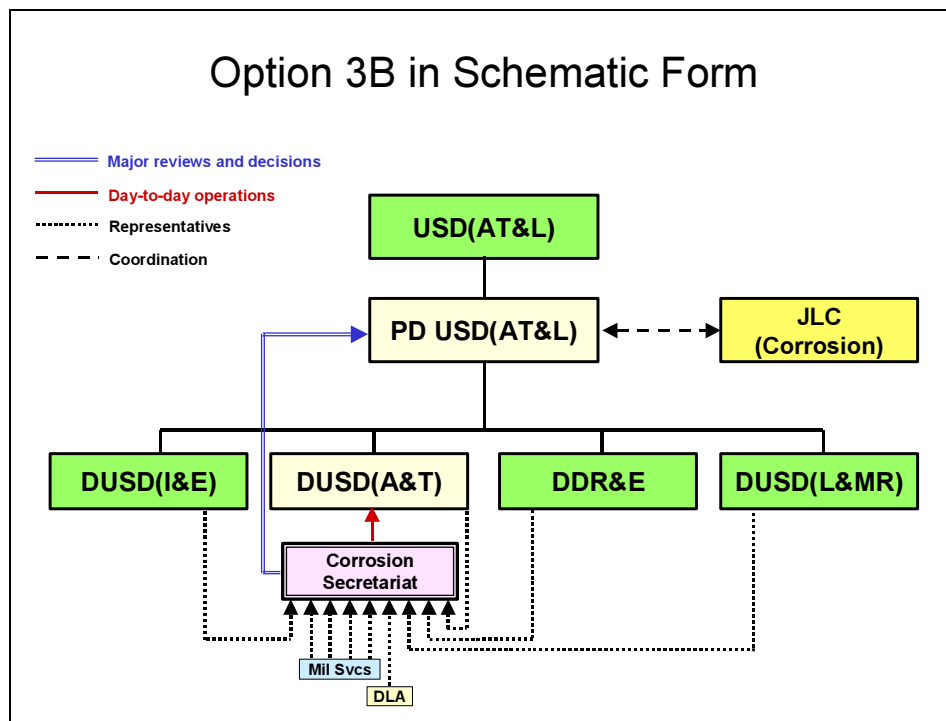
The Corrosion Secretariat could report directly to the PD or to a lower level. Option 2, reporting to the PD, would give more stature to the Secretariat and would make this position more effective than it would be at a lower level.

Option 3, reporting to a Deputy Under Secretary or the DDR&E, would lessen the Secretariat's access to the PD. However, since the PD is dual hatted, Option 3B would overcome this disadvantage to some degree.

The following two charts illustrate Option 2 and Option 3B schematically.



In Option 2, the Corrosion Secretariat is staff to the PD. The Secretariat clearly carries out the direction of the PD and draws upon the inputs and support of all the stakeholders. The Corrosion Working Groups of the Joint Logistics Commanders (JLCs) would be represented at the Secretariat, although this slide does not show that link explicitly. With a senior executive heading the Secretariat, the need for attention and intervention by the PD would be minimized.



In Option 3B the same organizations are represented at the Corrosion Secretariat. The Secretariat's senior executive would be authorized to take major decisions and disputes directly to the PD. This could place the Deputy Under Secretary in an awkward position except that, in this case, the Deputy Under Secretary is also the PD.

## Supporting Office Assessment

- ❑ Option 2 and Option 3B both exploit the existing management framework and schema and are likely to
  - Promote continuity of effort and purpose
  - Facilitate external and internal staffing
  - Be acceptable to the Military Services and the Congress
- ❑ Both options also provide a management structure and process that will enable AT&L to
  - Develop and administer an effective survey and information-gathering effort
  - Develop and implement an appropriate DoD strategy
- ❑ Option 2, however, is preferable for the first year because it provides for
  - A simpler management framework
  - More direct reporting and coordination lines
  - More flexibility in hiring

Option 2 and Option 3B have much in common; however, in our judgment, Option 2 is the better for at least the first year or two. The relationship with the Deputy Under Secretaries and staffs is more clear cut. Service staffs are likely to be more responsive. The organization of Option 2 obviously is responsive to the legislation.

One additional advantage of Option 2 relates to filling the senior executive position. We believe that hiring a person who has the right qualifications will be easier if the position reports directly to the PD rather than to a lower level. This could be important, particularly if the position is filled from outside the Department and possibly appointed for a limited term.



## Outline

- ❑ Background
- ❑ Appraisal of the Situation
  - Management Structure and Schema
  - Illustrative Accomplishments
  - Summary Appraisal
- ❑ Options To Meet Legislative Requirements
  - Strategy
  - Organizational Structure
- ❑ Summary, Highlights, and Next Steps

Next, we will summarize and look to the future.

## Summary

- IDA quick-look suggests the following:
  - Management responsibility and authority for corrosion and corrosion-related matters has essentially been delegated to the Military Departments. OSD staff's visibility on these matters is uneven
  - The Department is devoting considerable effort and attention to this area; however, at this juncture, it is not possible to assess the adequacy of today's
    - Management structure and schema
    - Resource commitments (funds and people)
    - Interface with commercial industry
- IDA identified alternatives to meeting legislative requirements designed to be responsive and keep options open regarding the
  - Long-term strategy
  - Organizational or management framework and schema

In summary, management authority for corrosion prevention and mitigation is now delegated to the Military Departments, which permits decisions to be made at lower levels. This approach has advantages, but it also means that the OSD staff has an uneven visibility into the Service programs.

Much is being done now, but we have not been able to assess the effectiveness or adequacy of the present program.

We have outlined an approach for developing a long-term strategy and have recommended an organizational framework for corrosion matters. We believe that the Corrosion Secretariat will be busy during its first year or two and that it would be best to keep an open mind regarding its ultimate size and position until a long-term strategy is fully developed.

### Highlights

- ❑ Designate the PD, USD/AT&L as the central focal point for corrosion and corrosion-related matters
- ❑ Establish a small Corrosion Secretariat for the first year that reports to the PD [or alternatively to the DUSD(A&T)] and is augmented, as required, by designated representatives from
  - Cognizant AT&L and OSD staff offices
  - The Military Departments and the DLA
- ❑ Task the new Secretariat with surveying the current situation to gain the information needed to make more informed judgments on the most appropriate
  - Long-term strategy for DoD
  - Management framework and schema given the strategy

We think that the PD should be designated as the official who has the responsibilities spelled out in the legislation.

We believe a small Corrosion Secretariat should be established, that all the stakeholders should designate representatives to work with the Secretariat, and that the Secretariat should acquire extensive knowledge of the present situation and the reasons for present practices and programs before developing a long-term strategy for the Department.

## Next Steps

- USD(AT&L)
  - Decide on the responsible individual and organization
  - Develop appropriate document to send to the Congress
  - Designate responsible individual by about 1 March 2003
- IDA
  - Provide annotated copy of this briefing to USD(AT&L) within 30 days
  - Assist as required

This chart shows the actions that must be taken soon. The organizational responsibilities and the approach to the long-term strategy must be determined so they can be included in a report to Congress at the time that the President's 2004 budget is submitted. The specific individual must be designated by about 1 March 2003.

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## **Appendix A**

### **GLOSSARY**

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## Appendix A GLOSSARY

A&T	Acquisition and Technology
ASD(C3I)	Assistant Secretary of Defense for Command, Control, Communications, and Intelligence
AT&L	Acquisition, Technology, and Logistics
DAA	Defense Authorization Act
DAB	Defense Acquisition Board
DDG	Guided Missile Destroyer
DDR&E	Director of Defense Research and Engineering
DLA	Defense Logistics Agency
DoD	Department of Defense
DoDD	Department of Defense Directive
DoDI	Department of Defense Instruction
DOT&E	Director of Operational Test and Evaluation
DTAP	Defense Technology Area Plan
DUSD	Deputy Under Secretary of Defense
DUSD(A&T)	Deputy Under Secretary of Defense for Acquisition and Technology
DUSD(I&E)	Deputy Under Secretary of Defense for Installations and Environment
DUSD(L&MR)	Deputy Under Secretary of Defense for Logistics and Material Readiness
ERM	Engineering for Reduced Maintenance
FAA	Federal Aviation Administration
FY	fiscal year
GAO	General Accounting Office
I&E	Installations and Environment

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IDA	Institute for Defense Analyses
IPPT	Integrated Product and Process Team
IPT	Integrated Process Team
JLC	Joint Logistics Commanders
L&MR	Logistics & Materiel Readiness
LANTDIV	Atlantic Division (of NAVFAC)
LCAC	Landing Craft Air Cushion
MAIS	Major Automated Information System
MDAP	Major Defense Acquisition Program
NASA	National Aeronautics and Space Administration
NAVFAC	Naval Facilities Engineering Command
NAVSEA	Naval Sea Systems Command
NFESC	Naval Facilities Engineering Service Center
ODUSD(S&T)	Office of the Deputy Under Secretary of Defense for Science and Technology
OSD	Office of the Secretary of Defense
PACDIV	Pacific Division (of NAVFAC)
PB	President's Budget Request
PD	Principal Deputy
PEO	Program Executive Officer
PM	Program Manager
POC	point of contact
QFR	Question for the Record
R&D	research and development
S&T	Science and Technology
SAE	Service Acquisition Executive



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SASC	Senate Armed Services Committee
SECDEF	Secretary of Defense
SES	Senior Executive Service
SOUTHDIV	Southern Division (of NAVFAC)
STC	Surface Treatment Center
SWDIV	Southwest Division (of NAVFAC)
USA	United States Army
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics
USN	United States Navy

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